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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 10

Application Number: 09/045,799
Filing Date: 3/23/98
Appellants: Hayashi et al.

Robert J. Seas
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed June 2, 1999.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The amendment after final rejection filed on August 25, 1999 canceling claims 15-20 has been entered.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 1-4 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

The rejection of claims 9-13 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

A substantially correct copy of appealed claim appears on pages 12 and 13 of the Appendix to the appellant's brief. The minor errors are as follows: Claim 1, line 2 reads "fan (5)", not "fan 95)".

(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

PATENT No.	INVENTOR(S)	ISSUE DATE
3,544,857	Bryne et al.	12/1/70
4,845,396	Huber	7/4/89
5,137,677	Murata	8/11/92
5,208,499	Barber et al.	5/4/93
5,648,682	Nakazawa et al.	7/15/97

OTHER REFERENCES

Japanese Patent 04-034,995 A; Yoshida et al.; Publication date 2/5/92

(10) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claims 1-6 and 9-14 are rejected under 35 U.S.C. 103(a). This rejection is set forth in prior Office action, Paper No. 7 and recited here for convenience.

1. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byrne et al.(Byrne) and Nakazawa et al.(Nakazawa). Byrne teaches a conductor having a plurality of wires 17, an outer frame 18 and connections 17b, and a plastic plate 13 which supports the plurality of wires in the encapsulated body. The plastic plate 13 inherently helps prevent deformation of the wires during encapsulation in an insulating body. Byrne teaches the wires are encapsulated in plastic. Nakazawa teaches an insert conductor 23 which is encapsulated by resin insert molding. It would have been obvious to a person skilled in the art at the time of the invention to construct the insert conductor of Byrne with the insert conductor sealed by resin insert molding because Nakazawa teaches that resin effectively seals the conductor and circuit elements from the outer environment with a compact thickness, and because Byrne suggests that any suitable insulating material can be used.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Byrne and Nakazawa, in further view of Huber. Byrne and Nakazawa teach every aspect of the invention, as discussed above, except the insert conductor and plastic plate deform preventer used in as a connector in a brush holder. Byrne teaches an encapsulated wiring device with the internal wires 17 having an insulating support 13. Huber teaches an insert conductor 23,24 molded in a brush holder. It would have been obvious to a person skilled in the arts at the time of the invention to construct the insert conductor of Byrne in a brush holder because Huber teaches that insert conductors with are molded into brush holders to form an integrated body, and with the plastic plate of Byrne because it provides insulating support to the wires.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Byrne and Nakazawa, in further view of Yoshida. Byrne and Nakazawa teach every aspect of the invention, as discussed above, except the deformation preventer composed of polyphenylene sulfide resin. Yoshida teaches that polyphenylene sulfide is used in is used in integrated circuits as an insulating layer. It would have been obvious to a person skilled in the art at the time of the invention to construct the insert conductor of Byrne with the deform preventer made of polyphenylene sulfide resin because Yoshida teaches that polyphenylene sulfide resin provides good adhesion and a firm adhesive property.

4. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted prior art and Murata. The Applicant's admitted prior art teaches every aspect of the invention, as discussed above, except an insulating member to prevent the conductor from being deformed by resin injection during the resin molding. Murata teaches an insert conductor for a magnetic device which has a resin premold 5 to help support the conductors 9 molded in an injection molded resin. The premold 5 provides a skeletal framework for the components which are to be injection molded. It would have been obvious to a person skilled in the art at the time of the invention to construct the brush holder of the Applicant's admitted prior art with the premold of Murata to support the conductor within the resin mold during the injection molding process.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's admitted prior art and Murata, in further view of Barber et al.(Barber). The Applicant's admitted prior art and Murata teach every aspect of the invention, as discussed above, except the deformation preventer composed of polyphenylene sulfide resin. Barber teaches that polyphenylene sulfide is a suitable material for constructing brush holders. It would have been obvious to a person skilled in the art at the time of the invention to construct the brush holder of the Applicant's admitted prior art and Murata with the brush holder made of polyphenylene sulfide resin because Barber teaches that polyphenylene sulfide resin provides a EMI/RFI suppression.

(11) Response to Argument

a. Issue #1: The examiner disagrees with the Applicant argument that because Byrd teaches insulating member 13 providing thermal insulation, the insulating member13 does not inherently provide deformation prevention to the wire. The fact that insulating member 13 provides thermal protection does not prevent the member from also providing deformation prevention. The insulating member 13 extending between the wires 17 and mechanically unites the wires, which inherently provides some support to the wires to prevent deformation when encased in the plastic. The claims BROADLY recite a deformation preventer, without further specifying any structural requirements for the deformation prevention member. This BROAD limitation is met by the insulating member 13, which inherently provides more support to the wires 17 than if no member extended between the wires. The Applicant's argument that Byrd and Nakazawa cannot be combined in a 37 USC 103(a) rejection is not persuasive. Both references are directed to insert conductors encased in resin, such that a person skilled in the art would be motivated to combine the references to provide an improved insert conductor with thermally protected and mechanically supported internal wires. The Applicant's argument regarding vehicle generators and brush holders is not persuasive, because the limitations are not found in claims 1-4.

b. Issue #2: The examiner disagrees with the Applicant's argument that there is no motivation to combine the insert conductors of Byrne and Nakazawa, with the brush holder of Huber. The field of art and the relevant prior art is directed to conductors formed in a resinous body(insert conductors). A person skilled in the insert conductor art(as broadly recited in claim 1) would clearly recognize that insert conductors are found in many types of applications, including semiconductor chips, brush holders, position sensors, and other electrical connectors. The thermal protection provided by the insulation member 13, which inherently provides support between the conductive wires as shown in Byrne, would clearly be useful in other insert conductor applications, such as the integrated wiring circuit of Huber. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

c. Issue #3: The examiner disagrees with the Applicant's argument that there is no motivation to combine the Yoshida with Byrne and Nakazawa. Byrne teaches member 13 is an insulating member. Yoshida teaches that polyphenylene sulfide resin is a good insulator for wiring boards because of good/firm adhesion properties. A person skilled in the art would combine Byrne with Yoshida because of these adhesive properties and because Yoshida teaches the insulating board is used to support electrical conductors, as in Bryne. The Applicant's argument regarding hindsight not persuasive for the reasons set forth above in Issue #2.

d. Issue #4: The examiner disagrees with the Applicant's argument that Murata teaches away from the claimed invention. Murata teaches an insulating premold 5 of resin providing a skeletal frame work for the insert conductors 9 and the hall sensors, prior to the resin material 11 is molded around both the premold insulating support 5 and the insert conductors 9. A person skilled in the art would combine the insert conductor of the brush holder disclosed in the Applicant's admitted prior art with the premold of Murata to provide the skeletal frame work prior to resin molding of the body of the brush holder.

e. Issue #5: The examiner disagrees with the Applicant regarding the patentability of Claim 14 for the reasons set forth in final rejection of claim 7(recited above and in paper 7). Barber teaches that polyphenylene sulfide resin is a good material for brush supports because it provides a EMI/RFI suppression.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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KIT

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